

Water Watchers

Getting Students Involved in Volunteer Monitoring



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INTRODUCTION TO LAKE PONTCHARTRAIN

Lake Pontchartrain is just one part of a vast ecological system called the Lake Pontchartrain Basin. Known for its slow flowing rivers and bayous, tranquil swamps, and lush hardwood forests, the Basin provides essential habitats for countless species of fish, birds, mammals, reptiles and plants. The famous wetlands and marshes that surround the Basin's waterways are the heart of Southeast Louisiana's commercial and recreational fisheries.

Interestingly, Lake Pontchartrain is not really a lake at all, but rather a shallow estuary where fresh waters from the rivers and bayous mix with the salty waters of the Gulf of Mexico. The Lake Pontchartrain Basin spans over 4700 sq. miles and includes not only Lake Pontchartrain but also Lakes Maurepas and Borne, 16 parishes in southeastern Louisiana, and four counties in Mississippi. Of this total area, Lake Pontchartrain accounts for 625 sq. miles. Six major rivers on Lake Pontchartrain's north shore, twelve municipal storm water pumping stations and bayous on its south shore, and the occasional diversion of the Mississippi River via the Bonnet Carre Spillway deliver freshwater to the Lake. Saltwater from the Gulf of Mexico enters and exits the system through two natural inlets, the Chef Menteur Pass and the Rigolets, and through the man-made Mississippi River Gulf Outlet. The connections to the saltwaters of the Gulf make Pontchartrain one of the largest estuarine systems along America's Gulf Coast. Estuaries are one of the most productive ecosystems on earth, and provide the world's best fisheries. Lakes Pontchartrain, Maurepas and Borgne comprise one of the largest contiguous estuaries in the Gulf Coast region—their wetland fisheries contribute more than

\$35 million to the local economy and provide the abundance of fresh seafood that has made Southeastern Louisiana famous.

Two major urban areas, the Greater New Orleans area (including Orleans, Jefferson, St. Bernard, and St. Charles Parishes) and the Greater Baton Rouge area, also lie within the Basin complex with New Orleans being located on the south shore of Lake Pontchartrain itself. Other land is rural, agricultural, or less developed than the Basin's major cities, but over the past decade has been experiencing rapid development.

CHALLENGES FACING THE LAKE

Human activities have caused severe degradation of the Lake Pontchartrain Basin's water quality and have also promoted eutrophication, an over abundance of nutrients, in the water. The most significant causes of eutrophication in the Basin include the disrepair of sewerage systems in the City of New Orleans which causes sewage to mix with storm water; the use of inefficient septic tanks; and agricultural runoff from the northern, rural lands of the Basin. Storm water runoff, both from urban and rural sources, acts as a conduit for delivering environmental contaminants and nutrients to the estuary. Contaminants and nutrients stress the already nutrient-rich and productive Lake Pontchartrain watershed, which, like any shallow lake or estuary, is sensitive to changes in water chemistry.

In the 1960's, the Pontchartrain Basin began showing signs of trouble. The Lake's south shore beaches were closed down due to bacterial contamination. These beaches have continued to remain closed. Fishery populations including shrimp, crabs, and oysters experienced a serious decline. Natural pollution filters, like

forests and wetlands, were developed and no longer treated pollutants but contributed to the run-off problem. By the 1980's, bacteria and other pollutant levels were so high in Lake Pontchartrain and its surrounding waters that the Louisiana Department of Health and Hospitals actually suspended its water quality monitoring programs and all major rivers connected to the Lake were closed to swimming. Many area residents gave up the hope of ever swimming in the Lake again.

THE LAKE PONTCHARTRAIN BASIN FOUNDATION

In 1989, the Lake Pontchartrain Basin Foundation (LPBF) was established to address the Basin's environmental challenges and to coordinate the restoration efforts of citizens with local and state agencies. LPBF is a non-profit environmental organization whose mission is to preserve and restore the Lake Pontchartrain Basin. Along with public advocacy and scientific research, an important aspect of the Foundation's mission is education. Since its inception, the Foundation has been involved in educating Basin citizens through presentations, field programs, and clean-up events. The Foundation's Environmental Education and Outreach Department educates teachers and students in the Basin through teacher workshops, classroom presentations, field trips, summer camps, as well as other programs.

THE WATER WATCH PROGRAM

One of the most popular education programs offered by the LPBF is the Water Watch program. This program provides junior high and high school classes/clubs with equipment, training, and technical support to perform water quality testing in local streams, canals, and bayous that drain into Lake Pontchartrain. Established with a small group of students in New Orleans in 1994, the program has grown to include almost 30 schools from seven parishes on both the north and south shores of the Lake. The majority of schools test in the Greater New Orleans area and in St. Tammany



Stormwater drainage canals in New Orleans do not filter or clean water on its way to Lake Pontchartrain. Students test for the pollutants that have washed into the canal from the adjacent neighborhoods.